

In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

1. (Currently amended) A method for handling a roam request at a first switch, the roam request sent by a second switch and containing information about the client that is roaming to the second switch, the method comprising:
 - storing information regarding the client;
 - receiving the roam request after said storing;
 - determining, in response to said receiving, if the first switch is a home agent for the client;
 - removing the stored information regarding the client from the first switch if the first switch is determined not to be a home agent for the client;
 - tunneling traffic for the client to the second switch if the first switch is determined to be a home agent for the client; and
 - sending a roam reply to the second switch.
2. (Original) The method of claim 1, wherein said roam reply contains network configuration information regarding the client.
3. (Original) The method of claim 1, further comprising:
 - discovering if the first switch is the same as the second switch;
 - performing said determining, removing, and tunneling only if the first switch is not the same as the second switch;
 - setting the first switch as the foreign agent if the first switch is the same as the second switch; and
 - updating a virtual network tag corresponding to the client in a data structure controlled by the first switch if the first switch is the same as the second switch.

4. (Original) The method of claim 3, wherein said updating includes updating a virtual local area network (VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new VLAN to which the client has roamed.
5. (Original) The method of claim 3, further comprising:
ascertaining if the roaming being attempted is layer 2 or layer 3 roaming;
executing said performing and setting only if the roaming being attempted is layer 3 roaming.
removing information regarding the client from a data structure controlled by the first switch.
6. (Original) The method of claim 5, further comprising:
checking if the client is known to the first switch;
performing said ascertaining, executing, and removing only if the client is known to the first switch.
7. (Original) The method of claim 1, wherein said roam reply indicates failure if something went wrong during the process, otherwise it indicates success.
8. (Original) The method of claim 1, wherein the roam request is an Inter Switch Roaming Protocol (ISRP) roam request.
9. (Previously presented) A method for responding to client roaming at a first switch, the method comprising:
receiving a move request from an access point associated with the first switch; and
sending a roam request to all peer switches in the same mobility domain as the first switch; and
determining if the move request is associated with client roaming between two virtual local area networks (VLANs) serviced by the same switch by including said first switch in said sending.

10. (Original) The method of claim 9, wherein said move request is a Switch Access Point Protocol (SAPP) move request.
11. (Original) The method of claim 9, wherein said roam request is an ISRP roam request.
12. (Currently amended) A method for handling a roam reply at a switch, the roam reply having been sent in response to a roam request sent by the switch, the method comprising:
 - receiving the roam reply from a switch determined, in response to the roam request, to be a home agent, the roam reply having information regarding a client that is roaming to the switch, the information not previously available at the switch;
 - determining if the roam reply indicates that the handling of a roam request was successful;
 - sending a reply to a corresponding access point indicating failure if the handling of said roam request was not successful;
 - setting the switch as a Foreign Agent for the client if the handling of said roam request was successful;
 - switching a router designated by the client with a default router for the switch if the handling of said roam request was successful; and
 - sending a move reply to said corresponding access point if the handling of said roam request was successful.
13. (Original) The method of claim 12, wherein said switching includes:
 - trapping all address resolution protocol (ARP) packets from the client; and
 - sending an ARP reply to the client with a default router address for the switch.
14. (Original) The method of claim 12, wherein said move reply includes a new VLAN identification.,
15. (Original) The method of claim 12, wherein said move reply is a SAPP move reply.

16. (Currently amended) An apparatus for handling a roam request at a first switch, the first switch having been previously accessed by a client and containing stored information regarding the client, the roam request sent by a second switch and containing information about a client that is roaming to the second switch, the apparatus comprising:

a first switch home agent determiner operative to determine, in response to the roam request, if the first switch is a home agent of the client;

a client information remover coupled to said first switch home agent determiner, the client information remover operative to remove client information in response to determination by the determiner that the first switch is not a home agent of the client;

a second switch traffic tunneler coupled to said first switch home agent determiner, the second switch traffic tunneler operative to tunnel traffic to the client in response to determination by the determiner that the first switch is a home agent of the client; and

a roam reply sender coupled to said client information remover and to said second switch traffic tunneler.

17. (Original) The apparatus of claim 16, further comprising:

a first switch second switch identical discoverer coupled to said first switch home agent determiner, said client information remover, and said second switch traffic tunneler;

a first switch foreign agent setter coupled to said first switch second switch identical discoverer; and

a virtual network tag updater coupled to said first switch foreign agent setter.

18. (Original) The apparatus of claim 17, further comprising:

a layer 2 or layer 3 roaming ascertainment coupled to said first switch second switch identical discoverer, said first switch foreign agent setter, and said virtual network tag updater; and

a client information remover coupled to said layer 2 or layer 3 roaming ascertainment.

19. (Original) The apparatus of claim 18, further comprising:
a known client checker coupled to said layer 2 or layer 3 roaming ascertainment and to said client information remover.
20. (Previously presented) An apparatus for responding to client roaming at a switch, the apparatus comprising:
a move request receiver;
a roam request peer switch sender coupled to said move request receiver; and
a first switch second switch identical discoverer configured to determine if a move request is associated with client roaming between two virtual local area networks (VLANs) serviced by the same switch.
21. (Currently amended) An apparatus for handling a roam reply at a switch, the roam reply having been sent in response to a roam request, the roam reply having information regarding a client that is roaming to the switch, the information not previously available at the switch, the apparatus comprising:
a successful roam reply determiner operative to determine that the roam reply is a success, said success being a function of the roam reply being sent by a switch determined to be a home agent in response to the roam request;
a failure reply access point sender coupled to said successful roam reply determiner;
a foreign agent switch setter coupled to said successful roam reply determiner;
a designated router switcher coupled to said foreign agent switch setter; and
a move reply access point sender coupled to said successful roam reply determiner.
22. (Original) The apparatus of claim 21, wherein said designated router switcher includes:
an address resolution protocol packet trapper; and
an address resolution protocol reply sender coupled to said address resolution protocol packet trapper.

23. (Currently amended) An apparatus for handling a roam request at a first switch, the roam request sent by a second switch and containing information about the client that is roaming to the second switch, the apparatus comprising:

means for storing information regarding the client;

means for receiving the roam request after said storing;

means for determining, in response to receipt of the roam request by the means for receiving, if the first switch is a home agent for the client;

means for removing the stored information regarding the client from the first switch if the first switch is not a home agent for the client;

means for tunneling traffic for the client to the second switch if the first switch is a home agent for the client; and

means for sending a roam reply to the second switch.

24. (Original) The apparatus of claim 23, wherein said roam reply contains network configuration information regarding the client.

25. (Original) The apparatus of claim 23, further comprising:

means for discovering if the first switch is the same as the second switch;

means for performing said determining, removing, and tunneling only if the first switch is not the same as the second switch;

means for setting the first switch as the foreign agent if the first switch is the same as the second switch; and

means for updating a virtual network tag corresponding to the client in a data structure controlled by the first switch if the first switch is the same as the second switch.

26. (Original) The apparatus of claim 25, wherein said means for updating includes means for updating a virtual local area network (VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new VLAN to which the client has roamed.

27. (Original) The apparatus of claim 25, further comprising:
means for ascertaining if the roaming being attempted is layer 2 or layer 3 roaming;
means for executing said performing and setting only if the roaming being attempted is layer 3 roaming.
means for removing information regarding the client from a data structure controlled by the first switch.
28. (Original) The apparatus of claim 27, further comprising:
means for checking if the client is known to the first switch; and
means for performing said ascertaining, executing, and removing only if the client is known to the first switch.
29. (Original) The apparatus of claim 23, wherein said roam reply indicates failure if something went wrong during the process, otherwise it indicates success.
30. (Original) The apparatus of claim 23, wherein the roam request is an ISRP roam request.
31. (Previously presented) An apparatus for responding to client roaming at a first switch, the apparatus comprising:
means for receiving a move request from an access point associated with the first switch;
means for sending a roam request to all peer switches in the same mobility domain as the first switch; and
means for determining if the move request is associated with client roaming between two virtual local area networks (VLANs) serviced by the same switch by including said first switch in said sending.
32. (Original) The apparatus of claim 31, wherein said move request is a SAPP move request.

33. (Original) The apparatus of claim 31, wherein said roam request is an ISRP roam request.

34. (Currently amended) An apparatus for handling a roam reply at a switch, the roam reply having been sent in response to a roam request sent by the switch, the apparatus comprising:

means for receiving the roam reply, from a switch determined, in response to the roam request to be a home agent, the roam reply having information regarding a client that is roaming to the switch, the information not previously available at the switch;

means for determining if the roam reply indicates that the handling of a roam request was successful;

means for sending a reply to a corresponding access point indicating failure if the handling of said roam request was not successful;

means for setting the switch as a Foreign Agent for the client if the handling of said roam request was successful;

means for switching a router designated by the client with a default router for the switch if the handling of said roam request was successful; and

means for sending a move reply to said corresponding access point if the handling of said roam request was successful.

35. (Original) The apparatus of claim 33, wherein said means for switching includes:

means for trapping all address resolution protocol (ARP) packets from the client; and

means for sending an ARP reply to the client with a default router address for the switch.

36. (Original) The apparatus of claim 33, wherein said move reply includes a new VLAN identification.

37. (Original) The apparatus of claim 33, wherein said move reply is a SAPP move reply.

38. (Currently amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for

handling a roam request at a first switch, the roam request sent by a second switch and containing information about the client that is roaming to the second switch, the method comprising:

- storing information regarding the client;
- receiving the roam request after said storing;
- determining, in response to said receiving, if the first switch is a home agent for the client;
- removing the stored information regarding the client from the first switch if the first switch is not a home agent for the client;
- tunneling traffic for the client to the second switch if the first switch is a home agent for the client; and
- sending a roam reply to the second switch.

39. (Previously presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for responding to client roaming at a first switch, the method comprising:

- receiving a move request from an access point associated with the first switch; and
- sending a roam request to all peer switches in the same mobility domain as the first switch; and
- determining if the move request is associated with client roaming between two virtual local area networks (VLANs) serviced by the same switch by including said first switch in said sending.

40. (Currently amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for handling a roam reply at a switch, the method comprising:

- receiving the roam reply, the roam reply having information regarding a client that is roaming to the switch, the information not previously available at the switch;
- determining, in response to said receiving, if the roam reply indicates that the handling of a roam request was successful;

sending a reply to a corresponding access point indicating failure if the handling of said roam request was not successful;

setting the switch as a Foreign Agent for the client if the handling of said roam request was successful;

switching a router designated by the client with a default router for the switch if the handling of said roam request was successful; and

sending a move reply to said corresponding access point if the handling of said roam request was successful.